Claims

1. Hydroxyethyl starch for use as plasma expander obtainable by hydrolytic pre-degradation of a starch rich in amylopectin, partial hydroxyethylation up to a certain substitution degree in the presence of alkali and subsequent hydrolytic degradation to a certain molecular weight, characterized in that

it has a mean molecular weight of 60,000-600,000 and a substitution degree MS of 0.15 to 0.5,

the ratio of the substitution of C2 to the substitution of C6 of the anhydroglucose units is 8 - 20 and

the substitution degree DS lies in the range from 0.15 to 0.5.

2. Hydroxyethyl starch according to claim 1, characterized in that it has a mean molecular weight of 80,000 to 400,000 and a substitution degree MS of 0.2 - 0.4, the ratio of the substitution of C2 to the substition of C6 of the anhydroglucose units is 8 - 20 and the substitution degree DS lies in the range from 0.15 to 0.40.

3. Hydroxyethyl starch according to claim 1, characterized in that it has a mean molecular weight of 100,000 to 300,000 and a substitution degree MS of 0.25 - 0.35, the ratio of the substitution of C2 to the substitution of C6 of the anhydroglucose units is 8 - 20 and the substitution degree DS lies in the range from 0.2 to 0.35.

4. Process for the preparation of hydroxyethyl starch according to claim 1 wherein

a) starch having a content of amylopectin of > 95 % is preextracted with methanol,

b) the starch is brought by acid hydrolysis to a suitable mean molecular weight,

c) the starch is subjected to an alkali wash,

d) the starch is hydroxyethylated by means of a hydroxyethylation agent under alkaline conditions,

e) the molecular weight is exactly set by acid hydrolysis,

f) the hydroxyethyl starch thus obtained is purified and

g) spray dried,

characterized in
that as hydroxyethylation agent 2-chloroethanol is used and the hydroxyethylation is carried out under alkaline conditions at room temperature.

5. Process according to claim 4,
characterized in that the pH value is kept at a value of about 12 during the hydroxyethylation.

6. Process according to claim 4 or 5,
characterized in that the temperature is kept at a value of about 20 to 25°C.

7. Process according to any one of claims 4 to 6,
characterized in that the hydroxyethyl starch is purified by filtration and ultrafiltration.

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